

Zündfolge

**BMW ACA
Puget Sound Region**

Zündfolge

April 1993



**Upcoming Events/
Classic Car Rally**

**Designing BMWs
of Tomorrow**

**BMW Names
New CEO**

Zündfolge

Was this a new BMW the last time your mechanic had any training?



In its day, this **BMW** was on the cutting edge of automotive technology. A place **BMW** has stayed ever since. But some mechanics just haven't kept up.

You can't blame them. They just don't have the resources of an authorized **BMW** Dealer. They don't have the time to go for the constant training our technicians get as a matter of course. Nor do they have access to the technical publications **BMW** sends us almost daily on every aspect of the repairs we perform.

Your average mechanic couldn't be expected to invest in tools that change with every model, every year. Let alone a \$35,000 Four-Wheel Alignment Machine.

Only your **BMW** dealer can do all that. With proper care, your **BMW** should stay just the way it is. Year after year. But your **BMW** mechanic shouldn't.



Service: 328-2300 • Sales: 328-8787

BMW  **SEATTLE**

714 East Pike Street
Seattle, Washington 98122

BELLEVUE MOTOR WORKS

2040 152nd Avenue N.E.
Bellevue, WA 98052

(206) 746-7141

Yohan Khosraw
Marc Khosraw

***Certified Factory
Trained
Technicians***



- Specializing in BMW, Mercedes Benz, Audi and VW
- Free safety check, oil change, wash and vacuum with service
- Free towing on the Eastside
- Show room quality detail
- 15% Club member discount
- OEM Parts
- Warranty repairs
- Emergency 24 hour on call service

40% OFF

Dealer Prices

BRAKE REPAIRS

By Certified
Professional
Mechanics

Present this coupon after our estimate.

40% OFF

Dealer Prices

SCHEDULED MAINTENANCE

1st and 2nd Service Intervals

ALL PARTS AND LABOR

(Major overhaul and diagnostic excluded)

Inhalt

1993 Board of Directors

Please limit phone calls to these volunteers to between the hours of 9 am and 9 pm.

President

Gary Parr
3573 E. "L" St.
Tacoma, WA 98404
472-4505

Vice-President

Dan Alvis
8318 Northway S.W.
Tacoma, WA 98498
582-0803

Secretary

Michael Thompson
10821 S.E. 172nd St., #4-A
Renton, WA 98055
228-0848

Treasurer

Tom Cox
11682 Holmes Pt. Dr. N.E.
Kirkland, WA 98034
823-5048

Membership

Mary Lee Helton
4700 Somerset Ave. S.E.
Bellevue, WA 98006
643-4729

Membership Promotion

Stephen Niver
2546 186th Ave. N.E.
Redmond, WA 98052
883-8577

Roster Manager

Greg Mierz
2218 S.W. Willow St.
Seattle, WA 98106
768-0376

Zundfolge Editors

Lucetta and David Lightfoot

Track Events & Past President

Paul Touby
3517 S. 8th
Tacoma, WA 98405
752-7549

Special Events

Al Lancaster
27820 37th Ave. S.
Auburn, WA 98001
854-4100

Zundfolge Staff

Editors-in-Chief

Lucetta and David Lightfoot
2641 39th Ave. W.
Seattle, WA 98199
282-2641
Fax 448-7728

Production Editors

Tom Williams
William Linder
Dara Laggart

Editor Emeritus

Denny Organ

Columnist

Thomas B. Nast

Zundfolge is published monthly (except November) by the BMW ACA Puget Sound Region. Office of Publication: 2641 39th West, Seattle, WA 98119. USPS publication number 715250. Subscriptions are \$10 annually (available only as part of the \$25 membership fee). Second Class postage paid at Seattle, WA. Postmaster: send address changes to *Zundfolge*, POB 1259, Bellevue, WA 98009.

This magazine is the monthly publication of the BMW ACA, Puget Sound Region, and remains its property. All information furnished herein is provided by the membership for members only. Ideas, suggestions and opinions, technical or otherwise, are those of the authors, without authentication by or liability to the editors or the Club. Unless specifically stated otherwise, the Club endorses no person, product, service, or business. Modifications within a warranty period may void the warranty.

Upcoming Motorsports Events

by Paul Touby 3

Classic Car Rally by David Lightfoot 3

Stalls

Stalls by Thomas B. Nast 4

Meeting at Exeter Garage 6

David Heard's Final Word by David Heard 7

BMW Names New Chief 7

Designing the BMWs of Tomorrow
by Robert Cumberland 8

Wheel Straightening by John Harbolt 10

Membership Drive by Stephen Niver 12



M-formation from the Editors 14

Classified Marketplace 16

Calendar

April 24 **General Meeting** at Exeter Garage in downtown Seattle. Starts at 10:00 am. See article and map in this issue.

May 6 **Board Meeting** at the Mierz residence in West Seattle. All members welcome.

May 28-30 **Emerald City Classic Car Rally.** A first for this area. Information in this *Zundfolge*.

June 16 **Wednesday Nighter** at SIR.

July 28 **Wednesday Nighter** at SIR.

August 20-27 **Monterey Historics** are August 20-22, **Pebble Beach Concours** is August 22, **BMW CCA Oktoberfest** is August 23-27. Group arrangements have been made by the San Francisco BMW Club for Monterey. Call Lucetta Lightfoot at 282-2641 for details and registration form.

October 30 **High Performance Driving School.**

BMW ACA events are partially supported by a generous grant from BMW of North America, Inc.

Upcoming Motorsports Events

Even though it's only April, it's not too early to start thinking about track events. This year we will have two Wednesday night open track events. The first one will be on June 16th and the second will be on July 28th. The cost will be the same as last year. In addition there will be a discount to those of you that preregister in advance for both events. Check out the May *Zundfolge* for all the details concerning the two Wednesday nighters.

I've mentioned in the past about the costs involved in putting on these events, and how important it is for club members to participate. The plain fact is that it costs the club approximately \$1500 for each Wednesday night event. This includes the track rental, insurance, and a new requirement this year by SIR, a medical aid unit. At \$40 per person preregistered, we would need 38 drivers to break even. During the past few years we have not had enough members turning out to come anywhere near to the break even point. To make up the shortfall we have been inviting the Porsche and Alfa clubs to our events.

Mary Lee Helton, the club's membership chairperson, is always telling the board of directors that the number one request from members is for more track events. Where are all of you at? We can't have more track events if you don't support the ones that we do have! Board members are all too familiar with moaning and groaning about member participation in club track events. Now the rest of you out there are going to have to suffer too, unless of course you come out in mass numbers and make me eat my words. (Fat chance). Enough of my liping off for this month. On to other important news.

In May the SCCA has two autocross schools on the schedule. These schools are very good and an inexpensive way to get a taste of high performance driving. For about \$12 (last year's price), you get a full day's instruction and hands-on experience. All that is required is you and your car. The SCCA will provide helmets. These schools would be especially



The invitation for the Emerald City Rally featuring the BMW 328 Mille Miglia.

beneficial for the young drivers out there to learn just what happens when their car gets away from them, and how easily that can happen. For further information on the SCCA schools, call Andy Kueblbeck at 863-2771.

Finally for anyone that is interested, the Golden Gate chapter of the BMW CCA is having a driving school at Laguna Seca on May 15th and 16th, and they have invited our members to attend. If you want more information, give me a call at 752-7549.

- Paul Touby

Driving Schools

Our club High Performance Driving School is coming up October 30th. Paul Touby, Track Events Chairman, can inform you more about that in upcoming issues.

But, if you can't wait, there are other opportunities. The racing-oriented clubs in Seattle and Portland hold a number of schools at Seattle International Raceway and Portland International Raceway. These are similar to our club schools and you can safely participate in a street car. Here's the schedule:

6/4	PIR	Team Continental
7/16	PIR	Cascade SCC
7/24	SIR	IRDC
9/11	SIR	IRDC
10/9	PIR	Team Continental
11/6	PIR	Cascade SCC

IRDC is the International Race Drivers' Club, a rather grandiose name for a Seattle club. Cascade Sports Car Club is the other Portland-based sponsor.

For more information, contact Steve Ingersol at 246-0977.

Classic Car Rally

The Vintage Rally Association is sponsoring the first annual Emerald City Classic Motorcar Rally. The intention is for this to be the premier annual driving event in the Puget Sound area. American and European sports and touring cars built prior to 1968 are encouraged to enter. Some exceptions will be made (there's one 3.0 CSI already entered).

The event is a rally covering about 400 miles over two days. It is a time, speed and distance rally with classes for novice and experienced rallyists. The rally will start in Seattle but mostly cover scenic roads on the Olympic Peninsula.

The rally will be held over the Memorial Day weekend. Friday evening will be tech inspection and a buffet dinner. The rally will begin Saturday morning and end Sunday evening. Dinner on Saturday and Sunday nights will be at Port Ludlow. Cost is \$395.

Don't have a suitable car but want to see the beautiful cars? They need volunteers to work check points. To enter or volunteer contact Dennis Howell at 325-1207.

There is a BMW connection here. BMW Seattle's pre-owned facility at Westlake and Denny, will be the check-in spot on Friday evening. There will be a tech inspection, registration pick up and a light buffet. And the poster car for the event is a BMW. It's the famous BMW 328 Touring Super Leggera that won the Mille Miglia in 1940. The car is owned by Jim Profitt of San Diego who had hoped to compete in the rally. Unfortunately, it doesn't look like Jim or the car will make it now.

- David Lightfoot

Stalls

by Thomas B. Nast



Motor Voters

Ever since the White House fell into the hands of a Mustang, it appeared that the Motor Voter bill would become law. The reality is now upon us.

I have not studied the details, of course, but the idea is quite easy to support. We have elected a succession of thieves, fools, liars and warmongers for the last thirty-odd years, who have bought us with our own credit and regulated us into paralysis. There is no reason to continue this travail. Turning voting over to motors is certainly worth a try, and Congress is to be commended for driving this law out of committee and injecting it into the lawbooks.

Motors, newly enfranchised, should be much less retiring about voting than the rightly-discouraged anthropoid electorate. We bipeds seem thoroughly exhausted by the process and its results, which are retreaded politicians and unbraked waste. It is time to move the voter out of the driver's seat and into the valve seat.

The Motor Voter law has, of course, inherently unfair features, as do all such laws. For example, the Constitution mandates that only a domestic model may be President. With nearly a majority of the voters now imports, how can we continue to pretend that we have a representative government? Oh, sure, this limitation was appreciated when the Kaiser was running. But how can we now keep Nissans and Hondas and Toyotas idle?

And what ever happened to the one motor, one vote rule? My fleet currently stands at ten, though they are not all registered. But they must be registered if they are to vote — the very goal of the Motor Voter law. That means the 2000CS, the R69RS, and the 3TA (at a minimum) will not presently go to the polls. Is there any point to registering them? Especially at today's prices?

In fact, the Motor Voter law just may be an invention of Comrade Mike and Comrade Bill to get cars to register. This is not for political, but for economic, reasons. The State rapes your wallet for a minimum of sixty bucks per. (The cost is of questionable constitutionality in this state,

see Article 7 Section 1 of Washington's constitution, but that's what they charge. We have a long tradition of not letting law get in the way of feeding the insatiable vortex of government.) Plus you get to spend a few hours (or more) dealing with emissions and repair stations, thus boosting employment, and adding another one or two hundred bucks in cost and lost time. Should a car be willing to put up for this just for the opportunity to vote?

It wouldn't have last November. Look at the choices! The winner was Mustang Bill, who, with our own Chevette Mike, wants to raise the price of gasoline, the lifebread of the newly-enfranchised voters, to about twice what it is now. (And that is just the aperitif, of course.) Mustang Bill is a quick-change convertible, who never saw a tax or "program" he didn't like or a campaign promise worth keeping. Running against him was an old pickup named George. With a flat tire, an empty tank and a cracked head, George never quite picked up. And then there was that tow truck, Ross, whose campaign theme was to "just look under the hood." Unfortunately, while Ross was under the hood somebody made off with the hub caps, steering wheel and radio. Kind of a one horse power show, if you know what I mean.

With the franchise shifted to motors, things just might be different. No more ridiculously reduced rural speed limits. No more boondoggle "mass transit" systems. (The motors know that they are the mass transit system of choice, and have been for over an half-century.) No more

doubled and doubled again registration fees, and doubled and doubled and doubled again parking fees. No more emissions stations (ever wonder why you didn't get to vote on that boondoggle?). No more sourcing spending excesses from fuel taxes. Require insurance companies to offer insurance covering a driver regardless of which motor in the family is being driven.

We can expect a little blow-by in the system as the motors begin to feel their political octane. Free car washes for motors over thirty years old, for example. Neighborhood tire filling stations. Community tracks and slaloms for recreational workouts. Curbside recycling for oil, tires, batteries and antifreeze. Repaving the interstates. Nothing out of the ordinary, and certainly less pricey than the profligate porcine programs promulgated presently.

It just remains to be seen who the next candidate will be, after Wild Bill finishes his single term. My two cents' worth is that it's another Lincoln, if we can find one with as much spark as the last one. Come to think of it, another Ford might not be so bad either. The last one did have a problem with frequent collisions and a four stroke handicap, but he was a self-starter who was stopped only by the unpardonable.

It would not be capricious to take a forward, instead of a rear, view. And in so doing, we find the potential candidates as diverse as the present lot. Elect a Taurus if you want some popular bull. Elect a Sable to continue wrapping the presidency with the perquisites of royalty. The best choice might be Probe, a candidate who could peer into those dark recesses of the government. An obvious running mate is a Dakota or a Cherokee, to appeal to minority groups, but a better pick might be a Dart, which can quickly and pointedly home in on the target to be struck.

Motor Voters. An idea whose time has come! We can do our part to avoid getting another air bag. To make sure BMWs are represented, send your contribution to GREASE PAC, care of this magazine.

Maximize Your Financial Opportunities!



If You're Already a Seattle Telco Member:

Take advantage of all the great benefits of Seattle Telco Membership—especially the lower loan rates, higher earning savings accounts and the VISA that's better than a bank card!

There's *more money* in it for you!

If You're Not a Seattle Telco Member:

There will never be a better time to join! Membership is easy. Simply complete the coupon below and return it, by mail or in person, to Seattle Telco. Hurry and take advantage of all the money-saving services and benefits available to you at your credit union.

Seattle Telco Membership Coupon

- I wish to join Seattle Telco.
- Please have a Member Service Consultant call me.

Name: _____

Address: _____

Eligibility: BMW ACA Puget Sound Region

Telephone: (home) _____ (office) _____

Return to: Seattle Telco Federal Credit Union
800 Stewart Street, Seattle WA 98101-1362

Meeting at Exeter Garage

Our April general meeting will be hosted by new *Zundfolge* advertiser Exeter Garage. Exeter has a detail shop located in downtown Seattle, next to Freeway Park.

The meeting has been scheduled for Saturday, April 24th, at 10:00 am. This is about three months before our annual Concours d'Elegance. You'll have time to get your car all cleaned up, whether you do the work or have a professional do it. Or both.

Exeter Garage owner Dennis Noland will take us through the whole process. He'll start with the right way to wash a car to avoid scratching the finish. Dennis is a 25 year user and fan of Meguire's products. A couple of years back Tom Nast wrote a series of articles detailing (no pun intended) the Meguire's system of cleaning, polishing and waxing the paint. The Exeter people will demonstrate the techniques.

Also covered will be treatments for the exterior rubber trim and interior vinyl or leather. Exeter uses Lexol on leather. Final clean up steps will include tricks on getting pesky residue out of cracks and off edges.

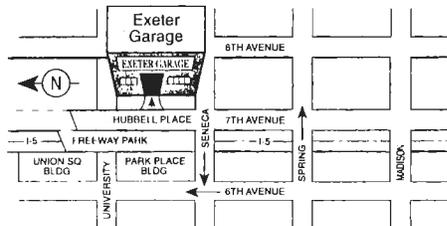
Besides offering full exterior detailing, Exeter sells the Meguire's retail line. Terry Richards, Northwest rep for Meguire's will also attend to answer any technical questions. Full color brochures which show the Meguire's system will also be available.

One other thing offered will be a personalized car care prescription. You will fill out a questionnaire about your car, the type of finish, your driving habits, where you live, where you park the car, etc. All this will be fed into a computer that will spit out car care recommendations based on all these traits.

Here's a great chance to learn all about the latest techniques and technology related to car detailing. Be there at 10:00 am. We'll be done early enough that you'll still have your afternoon free.

Driving instructions to Exeter Garage from Southbound 1-5: Exit at Union

Street, go left on 5th Avenue, left on Spring Street, left on 7th Avenue/Hubbell Place. The entrance is the first driveway north of Seneca. From Northbound I-5: Exit at Madison Street. Go straight ahead on 7th Avenue for 2-1/2 blocks. The entrance is the first driveway north of Seneca.



Compendium

The club's famous tech tip compendium is once again available. This is probably the finest resource of its kind and very helpful to anyone maintaining an older BMW.

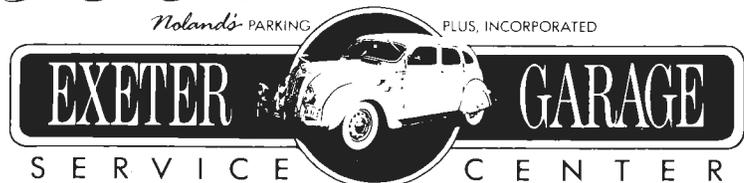
The compendium is an organized collection of technical tips gathered from BMW chapter newsletters across the country. It is organized by section. For example, electrical, brakes, engine, etc. It's over 400 pages and covers cars through the 320i.

If you'd like a copy, contact Paul Touby at 3517 S. 8th, Tacoma, WA 98405. Send a check for \$30 payable to BMW ACA.

Back Issues

Do you save your back issues of *Zundfolge*? Would you like more? They're interesting reading, covering BMW history and BMW club history.

They're free for the taking; just come and pick them up. Contact David or Lucetta Lightfoot at 282-2641.



Auto Detailing

Meticulous Care For
The Owner Who Expects It!

- Showroom Quality Results
- We Protect Your Investment
- Only The Finest Products - Meguiar's

Pick - Up & Delivery
622-9800

Downtown next to Freeway Park
7th Ave. (Hubbell Pl.) & Seneca

Quick/Lube Service Too!

MEMBER OF BETTER BUSINESS BUREAU AND PROFESSIONAL DETAILING ASSOCIATION



David Heard's Final Word

Dear Editor:

It is obvious from the responses to my article on the 318is that I did not clearly state my conclusions about this "entry level" BMW, an error I will briefly try to correct.

If you re-read the article, you will see that I did not compare the 2002 with the 318is. Only Tom Nast read it carefully enough to realize this. What I did do was offer an individual opinion about an automobile that I drove extensively. What I failed to say was that I was very disappointed that I encountered some of the same deficiencies found in my 2002 (which, everyone, I freely admit exist). I was hoping that over the past twenty years, BMW would have figured out how to eliminate these and the other deficiencies I described. I was also disappointed that BMW chose to market its "entry level" car as it did: the 3-series with a smaller engine, rather than the 325i without the power windows, power sunroof, trip computer, excess insulation, and other unessentials to the true "ultimate driving machine." Tom Nast's closing paragraph accurately describes what I had hoped to drive.

The 318is is a fine automobile with excellent features (which I did mention) and it is certainly superior in many ways to the 2002. It just does not meet my motoring needs.

Sincerely,
David Heard

BMW Names New Chief

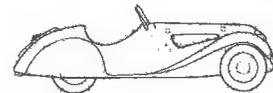
The guessing game over who will succeed BMW Chairman Eberhard von Kuenheim is over. During the last week of March, BMW appointed Bernd Pischetsrieder as Chief Executive. Von Kuenheim, who has been Chief Executive of BMW since 1970, will retire in May. There is a speculation that von Kuenheim will retain some control as

head of a new holding company.

The early front runner for the job was R&D head Wolfgang Reitzle. But Reitzle was responsible for the early quality problems with the new 3-series and was the driving force behind the 8-series, BMW's biggest dud ever. By contrast, Pischetsrieder has been head of production and was the board member who pushed hardest for BMW to open a U.S. plant. The U.S. presence continues to be his interest.

Pischetsrieder said that BMW does not intend to go down market into mass production. "We have no desire to manufacture cars for everybody. We don't want everybody as our customer. We want people who love quality cars and are prepared to pay a price for it," he said.

- *The Seattle Times*



The Golden Gate Chapter
invites you to



OKTOBERFEST '93
SONOMA VALLEY • GOLDEN GATE CHAPTER • BMW CCA
AUGUST 23-27

in the heart of the beautiful
Sonoma Valley wine country
of California




Rohnert Park, California

Designing the BMWs of Tomorrow

by Robert Cumberland

Designing a new car is a complex job, one that takes a large group of highly skilled people, no matter how simple the car itself may be. Current top-line racing cars, the single-seaters that run at Indianapolis or on the worldwide Formula One circuit, require crews of 40 to 150 engineers and designers, backed by draftsmen, prototype builders and other specialists whose every working hour is devoted to design. And that number does not include the people who design the engines. A mainstream manufacturer needs many more people. A particularly efficient manufacturer, Honda, whose Accord was the best-selling car in America in 1991, created that car over a three year period using 500 people.

That's exceptionally tight; some companies use 5,000 people to design a new car over five to six years. Even then, they may carry over engines, gearboxes and other high-investment parts. All-new cars, with absolutely no pieces left over from previous models, are extremely rare. The Accord is one, and so was the 1986 Ford Taurus. The 1993 Chrysler LH models are almost all-new, but not completely. They use the internal components of the Ultradrive automatic transmission Chrysler has sold in other cars during the past few years. A more typical development pattern is that followed by Cadillac, which had a new body and chassis for the Seville last year, and a new engine and transmission for it this year. Both Chrysler and Cadillac used more people than Honda to design their cars, but many, many fewer than in the past.

To a lot of people, the only "design" worth talking about in cars is body shape. Often, that's the only thing that changes. If you look at a Ford Crown Victoria or a Chevrolet Caprice, you may see a new body, but the chassis frames have been around since the 1970s, and in the case of the Caprice, the basic engine is almost 40 years old. The full design process is not obvious, but it can be described as a series of steps that lead inexorably to a car that you can go out and buy.

I had the good fortune this past spring and summer to follow a truncated but

realistic car-body design project from start to finish. The designers were all students at the Art Center College of Design in Switzerland, and although BMW conceived and sponsored the project, even turning over some of its most advanced facilities to two students, the premise was not one that BMW is actually pursuing. Or so they say.

The goal was stated in simple terms: The students were to imagine "My First BMW," and then transform their mental images into forms that could be shared by others, discuss and refine those ideas, then create a model. The steps that were followed are exactly those that BMW's own designers would take in giving form to a new production car. Because the project was not a production program, which would include extensive working with engineering and manufacturing, its time-scale could be truncated. For the nine students in the eighth-term Advanced Transportation Design class, the project lasted 14 weeks. For the two whose work was selected for further development, an additional two-week period inside BMW's new integrated research center in Munich, allowed the computer-created mathematical models they had developed to be transformed into three-dimensional scale models that could be painted, trimmed and visually analyzed.

Car-body design starts with simple notions, mental images of what might be done to clothe a package of mechanical elements and passenger space. The dimensions and general layout of that package are the combined work of product planners, marketers, engineers and, of course, the stylists who will provide the final form. The usual way to express the mental constructs is to make sketches, simple illustrations of what a car might look like. Not all designers can draw, but most can and they create pictures that are as clear as photographs, pictures that can be discussed by their design managers.

It is not common to allow top management, the people who decide finally what will be made, to look at drawings; it is too easy for the inexperienced to be misled. The usual practice is to show full-scale

models to the decision makers. Long ago, such models were made of wood. Plaster of Paris became the favored material of many designers—the designers of Pininfarina in Italy still create models using plaster. Most of the industry, however, uses styling clay, a secret mixture of pure clay, rare earths, sulphur and other ingredients. Clay became the material of choice at General Motors in the 1930s, when Harley Earl and his colleagues were creating the modern styling art. As a thermoplastic material that must be heated to be pliable, it allows extremely accurate shaping, and it is very quickly changed.

At BMW, as in other companies, there is a process of divergence, as the designers offer as many ideas as possible, giving the design managers the widest possible choice of directions. Then, as decisions are made, a convergent process takes place, in which all the designers work on the same basic design. Sketches give way to full-scale "tape renderings," orthographic line drawings made with black tape. Once those drawings are approved, models follow.



BMW, and the Art Center students, also embarked on the latest development in the never-ending search to speed up the process of developing cars. Instead of making fifth-scale models, which was once a typical practice for designers, the students used a Canadian computer program called "Alias" that allows one to construct a photorealistic image on a computer screen, and then to manipulate that image, rotating it, changing your point of view, "walking around" a car that doesn't exist, other than as magnetic impulses. GM, Honda, Volvo and Renault

all are using Alias now, but BMW is perhaps in the lead. No matter how it was created, every design that is made into a full-scale model at BMW passes through the Alias process, which creates a complex mathematical model. By using that digital data, BMW modelers can create a full-scale clay model in days, instead of weeks. The 100-strong modeling staff still can create a clay model using hand and eye, but it is so much better and quicker to have a model carved out quickly by a computer-driven milling machine. Then the final corrections can be made by the skilled hands, and the data of the approved surfaces fed back into the computer. Literally years can be saved in the whole process.

But shifting to computers is not easy for many designers. In the Art Center project, one of the students—the one who made the best drawings and who explored the widest variety of solutions—was baffled by the Alias, and chose to drop out in the 11th week.

Like them or not, though, computers are the future of the design profession. From now on, every car BMW produces will have been modeled in Alias before being made as a full-scale model. The procedure is that the computer mill cuts a block of plastic foam to the exact shape determined by Alias. Professionals take a look at that shape and decide where changes are necessary to “sweeten” it. Those changes are programmed into the computer, and then the mill cuts the plastic away to a surface about 3 inches inboard of the presumed final shape. Clay is added to that plastic block and another cut is made. The experienced eyes again regard the surfaces, and any changes are made by hand by the same skilled modelers who worked out the computer programming.

When the designers have totally established, to the nearest ten-thousandth of an inch, the desired shape of the final car, the mathematical model can be released to engineering and manufacturing, and they can create their parts of the car within that envelope. My students were able to see exactly what they had

created on the computer in physical form. Had anyone wanted to build a real car to one of those shapes, all the work had been done.

As a new generation of designers who grew up with video games enters the field, virtually all the creation that takes place outside a designer’s brain will be done with computers, from sketching to modeling. Already some companies have giant video screens on which photorealistic computer renderings of full-sized cars can be observed by management. One day cars will probably be made without models at all, but we’re a long way from that today. You can be pretty sure that your next car will have started as a sketch and will have existed as a full-size mock-up before it became a metal prototype, and that hundreds of pairs of hands and eyes will have been involved.

- *Alaska Airlines Magazine*



Professional Detailing
Hi-Tech Finess Polishing
Color Sanding
Leather Care

(206)641-9932

13600 N.E 16th St.
 Bellevue, WA 98005



The new 3-series was almost entirely designed on computers.

THE ULTIMATE SOURCE

94 North Woodhull Rd., Huntington, NY 11743

WORLD'S LARGEST BMW CATALOG



FREE CATALOG

- 352 Pages
- 740+ Photographs & Illustrations
- 30+ Color Pages
- 410+ Tech Tips
- Euro Spec Parts
- Better Coverage Than Anyone In The BMW Business
- Competitive Discount Prices

Orders: 1-800-537-8248

In NY: 516-385-8686

• Visa • Mastercard • Discover
• \$25.00 Min. Order

Wheel Straightening

I love my Fittipaldi wheels, but they sure do bend easily. When I got a new set of tires recently (D40-M2s), I decided that I should make sure that all my wheels were in good shape. I knew that one was slightly bent, 'cause I had put that one in the trunk as a spare. Close examination revealed that the left front was also not quite right.

Both wheels had the same problem although to differing degrees. The problem was a slight (but noticeable) flat spot on the outside rim only. Having previously sent wheels off for straightening, I knew approximately how much it cost, and how long it took to get them back. Since my two wheels weren't really bent too bad, I didn't want to spend the money, and I didn't want to be without them for 2-4 weeks, I decided to try straightening them myself.



As you can see from the photo, I cut a piece of 2" x 6" to the correct angle and curvature to fit inside the rim and glued on a thin sheet of rubber. I figured that this would spread the force in one direction over a large portion of the wheel while I applied the other end of the force to a small area (the flat part). The force was supplied by a 4 ton axle jack with the upper end padded and centered on the offending flat spot. I actuated the jack until the wheel looked round again and left it there for several hours. Periodically I would go out into the garage and check it and give the jack another pump. After about 6 hours I removed the jack and the flat spot was gone. WOW, it worked!

I had done the least bent wheel first, so I decided to tempt fate and try it again on the other one. Again, it worked and the flat spot was gone. These wheels may not be 100% true, but they sure look round, and a little ingenuity saved me a few bucks.

I would not have tried this if the wheels had been bent very bad. Also, there's no way this would work with a shallower wheel. You need to get the whole width of that 2" x 6" in the wheel, and get a good straight alignment of the jack between the 2" x 6" and the opposite side of the rim. If you think this might work for you, I advise you to be very careful and go slowly. Saving a few bucks is not worth breaking a wheel or having a hydraulic jack ricocheting around your garage.

- John Harbolt

Das Bimmer Rundschreiben

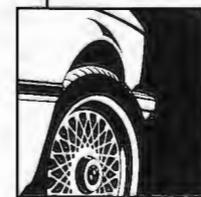
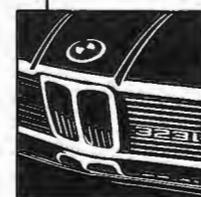
Writers Wanted

Do you have a talent for writing and love BMWs? Want a forum for your work? *Zundfolge* is looking for quality contributions. With the increased size of the magazine, we now need more contributions. And if you'd like to write but are short of ideas, we'd like to use you to cover events or BMW issues of interest to our members. Call David Lightfoot at 282-2641 if you'd like to talk about it. If you'd like to submit something, send it to the Lightfoots' at the address on page 2. Or fax it. We will accept computer printed, typed, handwritten, crayon, whatever. But, we prefer it on floppy disk using Word or Word Perfect accompanied by hard copy. This is your chance to be a cub reporter.



BMW PARTS & ACCESSORIES

FREE COLORFUL 100 PAGE CATALOG
FAST DELIVERY
HUGE INVENTORY
LOW PRICES
KNOWLEDGEABLE SALES STAFF



Specialist in replacement parts, accessories and performance products for your BMW. Names like Racing Dynamics, Zender, Bilstein, Dinan, Nardi and more!

Order Toll Free:

1-800-535-2002

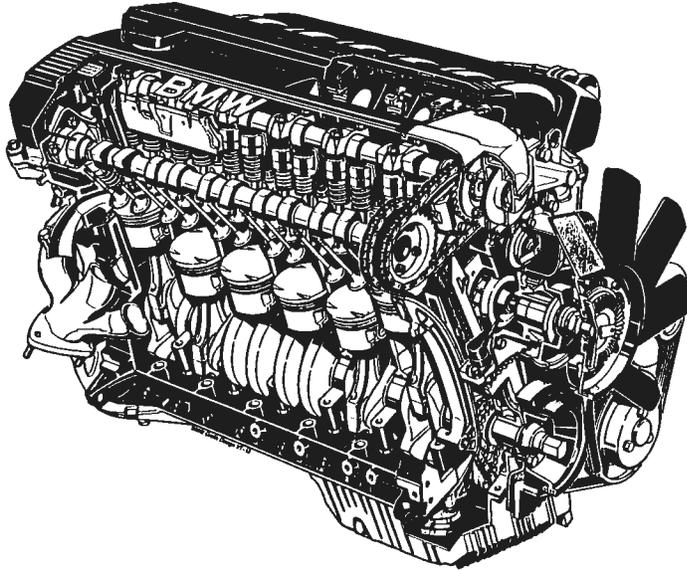
Fax (24 hours): **1-603-659-7295**

OFFERING QUALITY PARTS AND CUSTOMER SATISFACTION FOR OVER 17 YEARS!



Bavarian auto service

44 Exeter St, Newmarket NH 03857



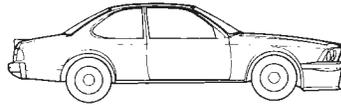
Phantom drawing of the BMW 2.5 liter six-cylinder engine with variable valve timing.

Vanos

BMW has made several improvements to the 2.5 liter six used in the 325i and 525i. Modifications to pistons and rods reduce internal friction by 13%. Variable intake valve timing (VANOS) has been added to increase low and mid-range torque. A gear on the end of the intake cam is externally cut with helical teeth. Its timing chain sprocket has internally cut helical teeth, and the two are connected by a ring gear that is moved back and forth axially by the force of engine oil pressure acting against a spring. The cam rotates 25 degrees relative to its timing chain sprocket, thereby varying intake valve timing. Valve lift remains constant at 9mm.

Below 1000 RPM, the new DME M3.3.1 engine controller directs VANOS to move the cam to the retarded position, where the lower valve overlap reduces residual exhaust gases and improves idle quality, allowing idle speed to be reduced for quieter operation and less wasted fuel. Between 1000 and 4800 RPM, the system moves the cam to the advanced position to maximize cylinder filling. As a result, mid-range torque and throttle response are improved, and fuel economy is up 5%. The increased valve overlap in the middle rev range induces internal exhaust gas recirculation, which helps to reduce NOx and HC emissions. Above 4800 RPM, the airflow tends to fall behind the rapidly moving piston, so the system retards the cam again. The 189 peak HP and 181 pound feet torque ratings are unchanged.

- Car and Driver



The Enthusiast's Store!



CLARK

Collector T-Shirts
Phil Hill, Dan Gurney
Stirling Moss & Clark
 A Collection Of Designs Dedicated To The Great Drivers Of The World. Brilliant 8-Color Designs On White.
 T-Shirts - \$18.95 • M, L, XL & XXL
 Sweatshirts - \$28.95 • M, L, XL, XXL
 Shipping & Handling - \$3.50

We Have A Complete Line Of Car Care Items & Accessories!
 Zymol, Pinnacle, P21S, Black Agaim, Power Washers, Finest Brushes, Chamois, Sea Sponges, Car Dusters, Car Covers, PIAA Lighting Systems, Logo Caps™ & A Complete Selection Of Die-Cast Cars - Jag XJ220, 330P4, EB110, Mythos, NSX & Plus More!



MARU WEST
 Motoring Accessories
 Salem, OR • FAX 503/581.0119
800-843-3568
 Call For Free Accessories Catalog!



Complete BMW Service

All services performed by experienced ASE Master Technicians in accordance with BMW factory specifications and warranty requirements.

- ELECTRONIC DIAGNOSTIC SPECIALISTS
- STATE OF THE ART EQUIPMENT
- FREE SHUTTLE SERVICE
- WE LOAN PAGERS

STRICTLY BMW INDEPENDENT SERVICE





OPEN SATURDAYS
747-6044
 2111 140TH AVE NE, BELLEVUE

Auburn Foreign Car

COMPLETE IMPORT REPAIR SPECIALIZING IN

Since 1968



Parts & Service For
 V.W. • MERCEDES • TOYOTA • BMW
 NISSAN • PORSCHE • HONDA • VOLVO • AUDI
 and other Foreign Cars

- FACTORY TRAINED MECHANICS
- STATE CERTIFIED EMISSION SPECIALIST

HRS MON-FRI 7-5




833-8161 or 872-0085
  725 Auburn Way N.-Auburn

Membership Drive

As the winner in the drawing of the volunteers (only one?) seeking the job of Membership Promotion chairperson, I'd like to say that I am excited about the opportunity to help our club grow. Increasing our membership is one important facet of growth; it is easy for each of us to participate. All you have to do is to talk to someone.

We want to make it as easy as possible for you to sponsor a new member and for the prospective new member to join our club. Of course you can talk to friends and acquaintances and suggest that they call the membership drive chairman [me] to join the club and maybe they will but it is sooooo much easier if you can simply give them a pre-addressed post card to mail in. If they are adverse to the U. S. Mail Service (which I can understand), have them give me a call and I will set them up. Either way they even get a free issue of our magazine.

Contact me if you have questions or would like some complimentary post cards. During the day I can be reached at 865-5073 and evenings use 883-8577. I am also available via fax (883-8577) and on the Internet at san@sdc.boeing.com.

To our old members, please join me in welcoming the following new members this year. To the sponsors, thanks for your efforts in recruiting new members. To the new members, I'm looking forward to meeting you at one of our events or club meetings.

- Stephen Niver

New Member:	Car Type/Year:
Bill Spornitz	'85 535i, '73 2002
Dean Lipke	'83 320i
Steven Gibbons	'76 2002
Luis Robles	'87 325is
Frank Sommers	'73 2002
Kurt Anderson	'79 320i
Alan & Jean Bentson	'86 325 es
Darrell Palmer	'74 2002
Sandra Hudecek	'91 318is
Frederick Maxwell	'74 2002, '76 2002
Mark Pulver	'76 2002
David Hoskins	'73 2002

U L T I M A T E
M O T O R
V E H I C L E S

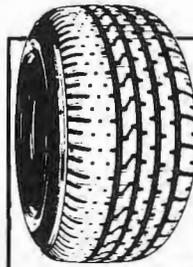
BMW

**PARTS
SERVICE**

823-1212

Gordon Kortlever
BMW Specialist
Pete Jackson
Service Consultant

*Ultimate Service for the
Ultimate Driving Machine*
13635 N.E. 126th Place
Kirkland, WA 98034
Telephone (206) 823-1212



CAR CARE
**Tires
PLUS
CENTER**

**Tires
PLUS**
Discounters
of **HIGH
PERFORMANCE
TIRES
& WHEELS**

PRICE:

Low Discount Prices.

SELECTION: Over **4,000** tires in stock
- Pirelli, Goodyear, Yokohama, Bridge-
stone, Michelin, B.F. Goodrich, and
Cooper.

SERVICE: Friendly, informed sales
people; **FREE** tire mounting using
European Tire Machines for Touchless
Mag Wheel Mounting. All wheels are
hand torqued to manufacturer's specs.

12540 N.E. 124th Street
Kirkland (Totem Lake)



821-9200

13310 Bel-Red Road
Bellevue (Next to Olympic
Boats, behind JB Factory Carpets)

641-7300

\$1,000 instant credit plan O.A.C. with no money down.



Sten Skaar	'88 M6
James Howak	
Gregory Jones	'68 1600
John Pace	'85 735i
Christopher Glover	'86 325e
Ralph Ehrlich	'88 528e
Ethan Golf	'91 850i, '92 325i
Tom Kyle	'92 325is
James Walker	'90 535i

Gerald & Luann Albertson	'85 318i
Don Becker	'77 320i
Justin Keolker	'79 320i
Dennis Bjork	'81 320i
David & Michelle Chinaur	'84 535i
Holbery Sutherland	'89 535i
Christopher Rapier	'70 2002

Recall

BMW NA has initiated a recall campaign for some 1989 525i cars. A fusible link mounted on the right side shock

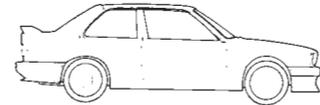
tower in the engine compartment may break due to heat-related aging. If a break occurs, *all* electrical systems in the car, including the engine, will be interrupted.

If the break occurs during driving, this could be dangerous.

Vehicles produced between August '88 and June '89 may be affected. The cars with this defect are within these chassis numbers; *not all* cars within these ranges are affected:

Model	Chassis No.
525i	1518129—1519170 BC 89002—BC90606
525iA	2081102—2086548 BE 19000—BE 25140

If you've got a 525 within these ranges, take it to the dealer for repair. The fix is free, of course. The procedure takes less than an hour.



FAT CITY THE ANSWER!
REPAIR and SERVICE WE'VE DARED TO REPAIR SINCE 1973

German Motor Specialists

Free Downtown Shuttle

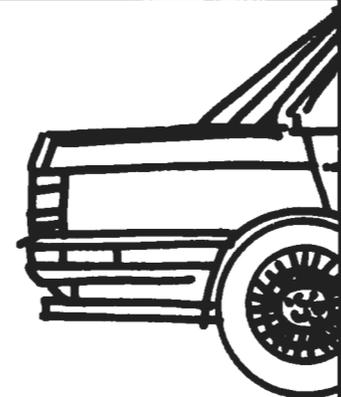
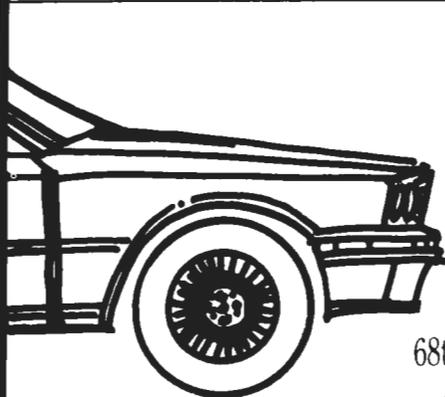
628-0911
777 THOMAS STREET, DOWNTOWN
Open mon.-fri. 7:30-5:00

BMW
PORSCHE
AUDI
VOLKSWAGEN
MERCEDES

Don't Let Just Anyone Touch Your BMW, Mercedes-Benz, or Volvo

Take it to the **BOSCH** Trained Technicians at...

HERMANN'S EUROPEAN AUTO SERVICE, INC.



68th & Roosevelt 522-7766 Customer Shuttle



Officials from BMW reaffirmed their decision to not export the new M3 to the U.S. BMW NA chief Karl Gerlinger said the car's price tag of nearly \$60,000 would run counter to BMW's positioning of the 3-series and that expected sales would not justify the cost of importing the car. Still, Gerlinger said he hopes to offer Americans a 3-series that's "quite a bit more spicy" than a current 325i. (Autoweek)

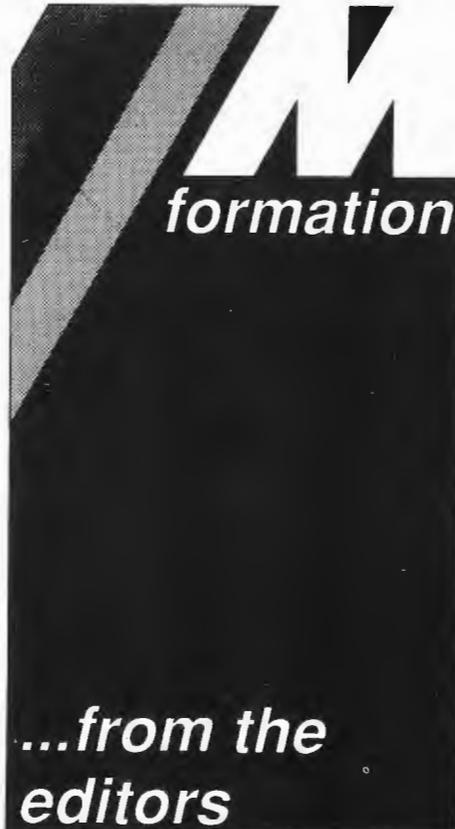
Since BMW's Spartanburg, South Carolina plant will become operational shortly before the nearby summer Olympics in Atlanta, lots of visitors are expected. Being considered are glass walls in the factory and trams. BMW expects up to 75,000 visitors a year. (Roundel)

Art car number 13 has been completed by Italian Sandro Chia. (BMW Magazine)

This isn't meant to be the monthly plug for Auto Gear, but they have in stock the finest BMW model we've ever seen. It's a BMW 507 in red and 1/43 scale. The detailing is amazing; it looks like a handmade model. The roundel emblems on the front and rear are nice, but the emblems on the knock-off wheel hubs are something else. But then look at the dash. The plastic wheel is accurate, as is the two color upholstery. But the tiny dash tach and speedo have needles and numbered dials! We had to use a magnifying glass to confirm this. Not cheap at \$36.95, but quality seldom is.

Franco Sbarro introduced the Sbarro Isatis V12 at the Geneva Show. It's based on the 7-series chassis and uses the BMW V12. Styling is described as "Viper meets Corvette ZR-1." Cars will be built to order. (Autoweek)

The E1, experimental electric car, was destroyed in a fire at the development center. (Roundel)



As expected, the new 325i cabriolet made its debut at the Geneva Motor Show in March. Also displayed was the Z13. The Z13 is a small city car powered by an 1100cc motorcycle engine, fitted longitudinally in front of the rear axle. The car is 39 inches shorter than a 3-series. Seating is similar to the McLaren F1; three with the driver in the middle and the passengers to each side and back. Acceleration to 60 mph is under 10 seconds and fuel economy is 45 mpg. BMW was said to be testing reaction before considering production. With odd styling and a \$30,000 price tag, the decision should be obvious: don't.

The 840Ci also debuted. This is the 8-series with the new 4.0 liter V-8 and a price well below the 850Ci. (Autoweek)



BMW had its best sales year in 1992 since 1986. Sales by model were:

	1992	1991
3-series	37,964	28,618
5-series	19,832	16,655
6-series	5	12
7-series	6,656	5,508
850i	896	1,711
M3	76	384
M5	262	455
TOTAL	65,691	53,343

Those 635s and M3s must have been sitting around a while. (Whispering Bomb)

McLaren tested its million-dollar F1 supercar for the first time. Testers reported "shattering" performance from the BMW Motorsport V12 engine. First customer cars are to be delivered in October. (Autoweek)

The new 3-series convertibles are scheduled for U.S. introduction at the New York Auto Show on April 10-18.

The final figures for 1992 are: BMW - 560,000 cars sold, Mercedes-Benz - 530,000. M-B's totals are down 60,000 from 1991. The Mercedes S-class is too pretentious, too expensive and inappropriate in the current economic climate. The 190 is now 11 years old. Only M-B's middle class still sells well, and it is being challenged by BMW's new V8-engined 540i. (Road & Track)

The company that built the electric motors for BMW's E1 and E2 electric cars has formed a joint venture with BMW and a European battery maker to commercialize its permanent magnet motor technology. Parties to the joint venture are Unique Mobility Inc., BMW Technik GmbH and the Drive Systems Group of ASEA Brown Boveri. The venture's goal is to bring electric-drive systems to market by early 1994. Definitive agreements regarding joint manufacturing are to be negotiated later. (Whispering Bomb)

BMW has severed its relationship with GE Capital Auto Finance. They have set up a new company called "BMW Financial Service Corporation." This is a wholly-owned subsidiary that will be headquartered at NA's Woodcliff Lakes, NJ facility. Kevin Westall has been appointed President of the company. He said that about 40% of all new cars sold in the past have been financed through BMW's finance joint venture, but he expects that to increase by 50 to 60%. (*Whispering Bomb*)

BMW U.S. has said it will not import the new 286 hp M3, but BMW Canada is taking orders for fall delivery. Base price is \$60,000 Canadian (about \$48,000 U.S.). (*Autoweek*)

CART chairman Bill Stokkan was asked about reports that BMW may be considering an Indy car engine. He responded, "I view our series as a North American series and, as such, it is our goal to have the major automobile companies who build cars in North America involved. In Ford and Chevrolet, we have two of Detroit's 'Big Three' and Honda, Nissan and Toyota have expressed interest in our series. BMW has obviously made a commitment to the North American market with its decision to establish manufacturing operations here, so I would say that three, three and one add up to seven." (*Autoweek*)

The E1 electric car may go into production with a small gasoline engine until battery technology improves. (*Automobile*)

The ten cars with the highest percentages of male ownership include the BMW 6-series with 88% and its successor, the 850i, with 87%. (*Automobile*)

BMW has pushed up the launch date of the V8 powered 5-series cars. The Detroit Auto Show featured the 530i sedan, 530i Touring and 540i sedan. The 3.0 liter engine produces 215 hp while the 4.0 liter makes 282 hp. Cars are to be available late spring or this summer as '94 models. (*Autoweek*)

**YOKOHAMA
BRIDGESTONE**
**MICHELIN
CONTINENTAL**

**HUNTER
COMPUTERIZED
4-WHEEL ALIGNMENT**

GREG DOBRINEN
RETAIL STORE MANAGER, ASE CERTIFIED TECHNICIAN
ALIGNMENT/SUSPENSION/BRAKE SPECIALIST

**LONGACRE
SCALES**

GREG FORDAHL
SEATTLE RETAIL ASSISTANT MANAGER
HI-PERFORMANCE TIRE, SUSPENSION, AND ALIGNMENT SPECIALIST

**BMW CLUB —
DISCOUNTS**

PUGET SOUND TIRE • 11011 PACIFIC HWY. SOUTH • SEATTLE, WA 98116
1-800-882-2057 OR 763-1273
DP WHEELS • EIBACH SPRINGS • KONI • BILSTEIN

Come see the new Continental Aqua Contac Rain Tire (Now Available)

Classified Marketplace

For Sale: Four 1987 BMW 325is cross-spoke alloy rims with Pirelli P6 tires. \$650 OBO. Call 564-7374 (Tac) & leave message.

For Sale: 1970 2002, sunroof, fair condition, \$500. 1969 2002 parts car. Pair 45DCOE Weber carbs w/manifolds. Call David Swenson 842-5519.

For Sale: Two 205/50 x 15 Pirelli P7's, good track tires, \$20 each. 6-1/2 x 15 steel wheels, ideal for snow tires, used less than 500 miles. Fit 5, 6, 7 series and M3, \$160 for the set of 4. 320i brake calipers and rotors - upgrade your 2002, \$125. 2002 engine parts, all except bare head - \$200. Ted Rodgers 432-2336, evenings or weekends.

For Sale: 1962 356B Coupe #210342, turnkey race car ready for PCA or Vintage; professionally built with break-in miles only. Racing suspension with Konis, large torsion bar, sway bars. Full interior, racing seat, Bluestreaks, great brakes, etc. Includes trailer \$18,900/offers? Ted Rodgers, 206-432-2336 evenings or weekends.

Wanted: 2002 in good condition. Prefer '72-1/2-'73 tii. Want to spend about \$4,000. Steve Gerrish. 935-6427.

For Free: 2002 body, virtually rust free (no cancer!). Offered again for free! You haul away. (Previous interested party didn't come get it.) First person to drag it away gets it. Last chance, if nobody takes it, off it goes to the scrap heap. Paul 752-7549.

For Sale: Six cyl fuel injection system complete w/brain and harness for 75 to 78 big six \$100. Haltech fuel injection system for any 6 cyl, legal in Washington, lists for \$2800. Sell for \$1200. Schrick 292 6 cyl cam \$175. Bilstein front struts for 6 series. Schnitzer 17 x 8 and 17 x 10 3 piece rims excellent condition \$700. Dan Alvis. 206-582-0803.

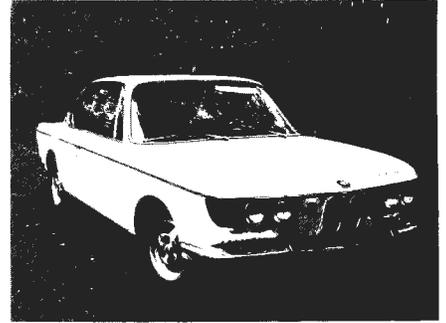
For Sale: 2002 parts of every type. Racing, high performance, fiberglass hoods and deck lids, turbo flares, Schnitzer flares, IMSA 80 inch flares, Zender air dams, rear spoilers, custom Euro dam/bumper cover, air conditioners, heads, rebuilt motors, used motors, trans, diffs, glass, new 2002 fenders and rocker panels, doors, and whole cars, I have 12 cars left. Some of them are driveable; rear clips, new and used, interiors, Recaros, racing seats, alloy rims, if I don't have it I know someone who does. Dan Alvis. 206-582-0803.

For Sale or Rent: ITB race car. Front running 2002 ITB car for SCCA and conference events. Full cage fire system, Simpson belts, all sorted and tested to be a competitive car or champion with good driver. Suspension is adjustable w/Delron bushings everywhere. Custom header, engine is freshly balanced and blue printed to the limit of the rules. \$4000. Sale or rent per event is negotiable. Dan Alvis 206-582-0803.

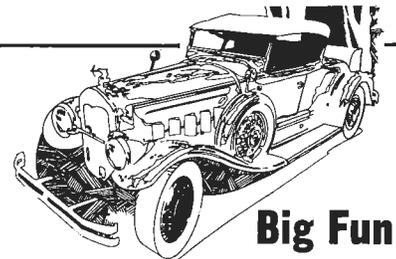
For Sale: Set of four BMW 325 14" factory alloy wheels in mint condition with Yokohama Y352 195HR 14/60 radials. Used less than 10K miles. Perfect for 2002 series upgrade! \$450. 649-8507.

For Sale: 1972 2002, gray, black 45K on rebuild, 9.3:1, Schrick 304, Bilsteins, 22mm bars stress bar, 320 brakes, 18 gal. tank, Weber, short shift kit, leather wheel, 14 x 6 alloys, no rust, very fast and clean. \$3500. Dan Alvis 206-582-0803.

For Sale: 1968 1602. Red w/custom grey interior, complete restoration in 1990. New 320i brakes, shocks, BFG's on alloy rims, 22mm swaybars, Weber, new motor 6K since rebuild, rebuilt 4-speed 4:10 rear end. Rear wing and air dam, Supertrapp exhaust. New chrome and paint. Fast and reliable. \$4000. Dan Alvis 206-582-0803.



For Sale: 1968 BMW 2000CS, very rare model, only 11,720 of these Karman designed coupes were built between '65 and '68. BMW alloy mags, AM/FM cassette plus original AM/FM short wave Blaupunkt radio. Excellent condition \$12,000 OBO. 604-796-9663 eves.



Big Fun On Little Wheels

Over 1,200 Different
Die-Cast Cars

•••••
• *IN STOCK* •
• 1/43 BMW 507 •
• Extraordinary •
• Quality •
•••••

Over 2,500 Motor Books.
Also Video Tapes, T-Shirts,
Lic. Plate Frames, etc.



10020 Main St.
Bellevue, WA 98004
635-9400

RNR Automotive Refinishing, Incorporated

COLLISION REPAIR BACK TO FACTORY SPECIFICATIONS
Where Quality is the Difference.

DISCOUNTS
AVAILABLE

Unibody/Frame Repair
LASER ACCURACY

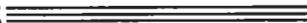
IMPORT SPECIALISTS
COLOR MATCH GUARANTEE
INSURANCE WORK

ESTIMATES: (8-1) (2-5) MON.-FRI.



1514-128th Pl. N.E.
Bellevue, WA 98005
Evans Industrial Park

453-2898

DETAILS  DETAILS

Thank you
for your
continuing
business.
We look forward
to serving BMW
club members.

- Doug and Nancy Garvey

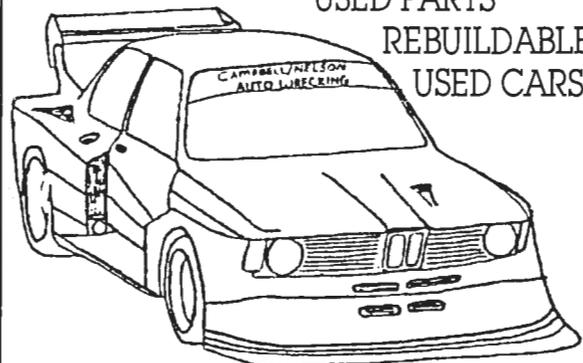
13500 Bel-Red Road, Bellevue, WA 98005

746-1976

DETAILS  DETAILS

CAMPBELL/NELSON Auto-Wrecking

USED PARTS
REBUILDABLES
USED CARS



The Northwest's largest selection for BMW

Quotes Gladly!
(206) 771-4931



SAAB
PORSCHE
VW
AUDI

Quality

USED PARTS

OPEN
8:30 to 5:00
SAT. 9:00 to 4:00

205th & Aurora

Across from Aurora Village

**YOUR
BEST
ALTERNATIVE
TO THE DEALERSHIP.**

- 12 Month/Unlimited Mile Warranty*
- We use only genuine OEM parts
- Factory trained service technicians
- 15% Off Parts for BMW Club Members
- Free shuttle to work or home



*ON ANY WORK WE DO

644-7770

EST. 1979

German Car Specialists INC

12408 S.E. 38th, Bellevue (Behind Factoria Cinemas)

VINES

*Specializing in
BMW Parts*

**NEW
&
USED**

- Sheetmetal & Interiors
- Engine & Transmissions
- Maintenance Items
& Accessories
- Exhaust & Brake Parts
-

2460 Morgan Road S.E.
Bessemer, Alabama 35020
(205) 426-2697

BMW ACA
Puget Sound Region
P.O. Box 1259
Bellevue, WA 98009

SECOND CLASS
POSTAGE
PAID
Seattle, WA
